

03040206-140

(Waccamaw River)

General Description

Watershed 03040206-140 is located in Horry County and consists primarily of the **Waccamaw River** and its tributaries from Kingston Lake to its confluence with Socastee Creek (AIWW). The watershed occupies 79,628 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Hobonny-Yauhannah-Ogeechee-Mouzon-Leon series. The erodibility of the soil (K) averages 0.14; the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 41.6% forested land, 28.5% forested wetland (swamp), 14.2% urban land, 9.7% scrub/shrub land, 2.4% water, 2.0% agricultural land, 1.4% nonforested wetland (marsh), and 0.2% barren land.

This section of the Waccamaw River flows past the City of Conway and accepts drainage from its upper reach, together with Bear Swamp (Butler Swamp, Willow Springs Branch, Busbee Lake, Wadus Lake), Pitch Lodge Lake, Cox Ferry Lake, and Thorofare Creek. Gravely Gully and Halfway Swamp (Big Branch) enter the river next, followed by Old Womans Lake, Big Buckskin Creek, and Peachtree Lake. Socastee Swamp and the AIWW (Folly Swamp) merge near the Town of Socastee to form Socastee Creek, which flows into the Waccamaw River at the base of the watershed. Enterprise Creek connects the Waccamaw River and Socastee Creek just upstream of their confluence. There are several lakes and ponds (totaling 477.0 acres) in this watershed, and a total of 129.1 stream miles. This portion of the Waccamaw River is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
MD-088	S	FW	AIWW 1 MILE SOUTH OF BRIDGE ON US 501
MD-089	S	FW	AIWW 2 MILES SOUTH OF BRIDGE ON US 501
MD-127	P	FW	AIWW AT SC 544 7.5 MILES SW OF MYRTLE BEACH
MD-110	S	FW*	WACCAMAW RIVER AT US 501 BY-PASS AROUND CONWAY
MD-111	S	FW*	WACCAMAW RIVER AT COX'S FERRY ON COUNTY ROAD 110
MD-136	S	FW*	WACCAMAW R. 0.25 MILES UPSTREAM OF JUNCTION WITH AIWW

Atlantic Intracoastal Waterway (AIWW) - There are three monitoring sites along this section of the AIWW. A Total Maximum Daily load (TMDL) has been approved for this area. This will result in decreased loadings of oxygen demanding substances to the system (see p. 201, Watershed Protection and Restoration Strategies, for more information on the TMDL). This is a tidally influenced system, which are often characterized by naturally low pH. Although pH excursions occurred at all sites, they were typical of values seen in tidally influenced systems with significant marsh and swamp drainage and were considered natural, not standards violations. Aquatic life uses are not supported at **MD-088** due to dissolved oxygen excursions. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions; however, a

significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Aquatic life uses are also not supported at **MD-089** due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen. Recreational uses are partially supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Aquatic life uses are not supported at **MD-127** due to dissolved oxygen excursions. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. In sediments, very high concentrations of zinc, copper, and chromium were detected in the 1996 sample, and P,P'DDE (a metabolite of DDT) was detected in the 1995 sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are fully supported.

Waccamaw River - There are three monitoring sites along this section of the Waccamaw River. At the furthest upstream site (**MD-110**), aquatic life uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported.

Further downstream (**MD-111**), aquatic life uses are fully supported; however there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen and a significant decreasing trend in five-day biochemical oxygen demand suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

At the furthest downstream site (**MD-136**), aquatic life uses are not supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen. A Total Maximum Daily load (TMDL) has been approved for this area. This will result in decreased loadings of oxygen demanding substances to the system (see p. 201, Watershed Protection and Restoration Strategies, for more information on the TMDL). Recreational uses are fully supported.

This portion of the Waccamaw River has been treated with aquatic herbicides from 1997-1999 to reduce the amount of water hyacinth to the greatest extent possible.

A fish consumption advisory has been issued by the Department for mercury and includes the Waccamaw River and the AIWW within this watershed (see advisory p.187).

NPDES Program

Active NPDES Facilities**RECEIVING STREAM****FACILITY NAME****PERMITTED FLOW @ PIPE (MGD)****COMMENT****NPDES#****TYPE****LIMITATION**

WACCAMAW RIVER
S.C. PUBLIC SERV. AUTH./GRAINGER
PIPE #: 001 FLOW: 2.18
PIPE #: 002 FLOW: 122.96
WQL FOR TRC

SC0001104
MAJOR INDUSTRIAL
WATER QUALITY
WATER QUALITY

WACCAMAW RIVER
GSW&SA/SCHWARTZ SLUDGE APPL. SITE
PIPE #: 001 FLOW: M/R

SC0037753
MAJOR DOMESTIC
WATER QUALITY

WACCAMAW RIVER WETLAND
GSW&SA/CENTRAL WETLANDS PLT
PIPE #: 001 FLOW: 1.2
WETLAND; WQL FOR TRC, NH3N

SC0039900
MAJOR DOMESTIC
WATER QUALITY

WACCAMAW RIVER TRIBUTARY TO RIVER
GSW&SA/CENTRAL RIVER PLT
PIPE #: 001 FLOW: 1.2
WQL FOR TRC

SC0040410
MAJOR DOMESTIC
WATER QUALITY

ATLANTIC INTRACOASTAL WATERWAY TRIBUTARY
USAF/MYRTLE BEACH AIR FORCE BASE
PIPE #: 001 FLOW: 0.144
PIPE #: 002 FLOW: M/R

SC0002097
MINOR INDUSTRIAL
EFFLUENT

SOCASTEE CREEK TRIBUTARY
FLORENCE BARNHILL MINE
PIPE #: 001 FLOW: M/R

SCG730016
MINOR INDUSTRIAL
EFFLUENT

SOCASTEE SWAMP
AVX CORPORATION/CONWAY PLT
PIPE #: 001 FLOW: 0.023

SCG250173
MINOR INDUSTRIAL
EFFLUENT

SOCASTEE SWAMP
ALLIED-SIGNAL, INC./CONWAY
PIPE #: 001 FLOW: M/R

SCG250069
MINOR INDUSTRIAL
EFFLUENT

WADUS LAKE
GSW&SA/CONWAY WWTP
PIPE #: 001 FLOW: 3.2
WQL FOR DO,TRC,NH3N,BOD5

SC0021733
MAJOR DOMESTIC
WATER QUALITY

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	PERMIT #
FACILITY TYPE	STATUS
CITY OF CONWAY DUMP	-----
-----	CLOSED
THOMPkins C&D DUMP	-----
CONSTRUCTION	-----

Mining Activities

MINING COMPANY	PERMIT #
MINE NAME	MINERAL
ERC, INC.	1032-51
SANDRIDGE MINE	SAND/CLAY
GROUND IMPROVEMENT TECHNIQUES	1056-51
LEES LANDING CIRCLE MINE	SAND/CLAY
FOX BROTHERS, INC.	0784-51
PIT #2	SAND/CLAY
FOX BROTHERS, INC.	0636-51
DEFENDER MINING, MINE #1	SAND
EDGE REALTY COMPANY	0782-51
J&B SAND & FILL	SAND
ROBERT O. COLLINS CO., INC.	1083-51
SOCASTEE PIT	SAND
C. OWENS & SON, INC.	0951-51
OWENS PIT	SAND/CLAY
FLORENCE D. BARNHILL	1015-51
FLORENCE BARNHILL MINE	SAND/CLAY
WACCAMAW CLAY PRODUCTS CO.	0065-51
WACCAMAW CLAY PIT	CLAY
DONALD RICHARDSON & SON, INC.	1099-51
RICKYS DIRT PIT	SAND/CLAY
CL BENTON & SONS, INC.	1107-51
SEA MIST	SAND

Water Supply

Portions of this watershed fall within the Waccamaw Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.23).

Growth Potential

There is a high potential for residential, commercial, and industrial growth in this watershed, which contains a portion of the City of Conway and the outskirts of the City of Myrtle Beach. A high increase of growth is expected east of the Waccamaw River in particular, and a moderate increase west of the river. All but the northern most corner of the watershed contain water infrastructure. Sewer infrastructure is located in much of the watershed, including the S.C. Hwy. 544 corridor, east of S.C. Hwy. 544 (excluding the area north of U.S. Hwy. 501), and in the Bucksport community. Commercial and residential development is the predominate land use in the City of Conway and along sections of U.S. Hwy. 501, U.S. Hwy. 17 Bypass, and S.C. Hwy. 544. Two industrial parks are located along the U.S. Hwy. 501 corridor as well as an existing rail line. A section of the former Myrtle Beach Air Force Base is located in the watershed and is being developed for industrial and commercial use. Most of the land use outside of these areas consist of residential development and timberland. Several major highway improvement projects are planned for this area in the future including the widening of U.S. Hwy. 501, S.C. Hwy. 544, and U.S. Hwy. 17.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A total maximum daily load (TMDL) for oxygen demanding substances has been developed for the main stem of the Waccamaw River and the Atlantic Intracoastal Waterway (AIWW) in watersheds 02040206-140, 03040206-150, and 03040207-020. The TMDL addresses 12 separate monitoring stations on the State's 1998 303(d) list of impaired waters. The TMDL, based on a maximum 0.1 mg/l deficit allowed in waters that do not meet applicable dissolved oxygen standards due to natural conditions, will result in a decrease of approximately 63% in the permitted oxygen demanding load discharged to the system. The decreased loadings are being implemented through the NPDES permitting system with new, more restrictive limits becoming final at the conclusion of appropriate compliance schedules.

Special Projects

Establishment of National Wildlife Refuge in Coastal South Carolina

In 1997, the U.S. Fish and Wildlife Service established the **Waccamaw National Wildlife Refuge**. The refuge extends over portions of the Pee Dee River and the Waccamaw River incorporating this watershed along with portions of watersheds 03040206-140 and 03040206-150. The purpose of the refuge is to protect and manage an important coastal river ecosystem, which includes a significant number of rare and endangered species, and large contiguous blocks of riverine wetlands and bottomland hardwood forests that provide habitat for wetland-dependent wildlife. The refuge also provides compatible wildlife-dependent recreational activities, such as hunting, fishing, wildlife observation, and environmental

education. The refuge was established due to the cooperative efforts of the Winyah Bay Focus Area Task Force, a regional coalition of federal and state agencies, industry, conservation organizations, and citizens.

Development & Implementation of a S.C. Coast-A-Syst

This project targets homeowners living along the Atlantic Intracoastal Waterway (AIWW) and Socastee Creek (watershed 03040206-140) and the AIWW and Little River (watershed 03040207-020). Like much of the coast, these areas are experiencing rapid development and increased populations, while also harboring fragile water resources for recreation and marine ecology. High fecal coliform bacteria counts, water quality non-supportive of aquatic life because of low dissolved oxygen, and pH excursions exist in local waterbodies.

To address these problems, the S.C. Sea Grant Consortium and Clemson University received Section 319 funds to develop and evaluate a program called South Carolina Coast-A-Syst. This product, modeled after the Home*A*Syst and Farm-A-Syst programs, will be used to teach watershed residents and waterbody users responsible practices for protecting water quality, with the ultimate goal to reduce bacteria and nutrient input into nearby waterbodies from urban/suburban activities and land development. Research will be conducted through surveys to determine what BMPs are appropriate for coastal South Carolina, where education about nonpoint source is lacking, and how best to reach homeowners in providing continued education. Education of coastal residents will include identification of practices which detrimentally affect water quality, reasons why those practices do so, and instructions in better water quality management practices.

Sea Grant Extension and Clemson Extension are publishing a S.C. Coast-A-Syst packet, which will include self-assessments and fact sheets on homeowner practices. Sea Grant Extension will also train Extension agents, Master Gardeners, and homeowner associations to administer this homestead self-assessment program, distribute the program and materials through homeowner associations and other public groups, provide support for the program through the Horry County Extension Service, and provide electronic distribution of the program via the world wide web.